

of a virgin country, is now fully realized by the officials administering most of the European colonies in Africa; this is true especially of the German and British colonies, all of which are well supplied with meteorological stations.

In the Belgian Congo a well-organized climatological service dates only from the year 1911. This service, which is under the Direction de l'Agriculture, includes 4 stations of the first order, 2 of the second, and 34 of the third. The distribution of stations, in operation or

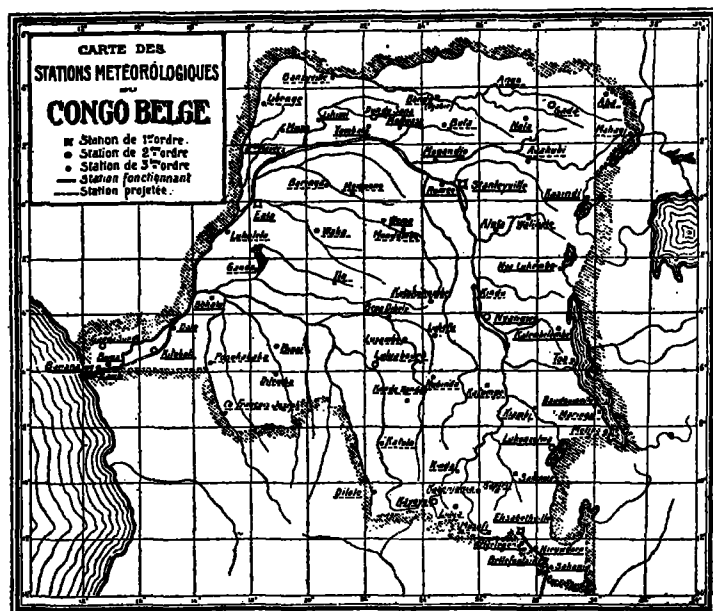


FIG. 2.—Map of meteorological stations in the Belgian Congo. (From Agric. Bull. of Belgian Congo.)

projected, is shown by the accompanying chart (fig. 2) from the March, 1913, number of the Bulletin Agricole du Congo Belge. From the same publication we learn that a rainfall chart of the Belgian Congo will probably be published in four or five years; also that at several places in the colony meteorological observations have been undertaken especially with a view to the requirements of aviation. It is understood that aeroplanes will be extensively used as a means of communication in this part of Africa.

BLUE HILL METEOROLOGICAL OBSERVATORY.

[Extracted from Report Harvard College Astronomical Observatory for the year ending Sept. 30, 1913.]

Pending the formal transfer in March, 1913, of the observatory to Harvard University, all costs of maintenance were defrayed by Mrs. A. Lawrence Rotch. In accordance with the wish of the founder, regular observations have been continued and the record now covers a period of 28 consecutive years. Normals for a 25-year period have been prepared and will soon be ready for publication. The usual work of the observatory was carried on without interruption. Comparative readings at the auxiliary stations, known as the base and valley stations, are now available for a period of nearly 25 years. These data will be utilized in studies of best methods of protecting vegetation from injury by frost.

Upper-air investigation by means of kites was continued until March, the last flight occurring March 7. This was during a thunderstorm and a discharge of lightning melted a mile of wire and damaged the kite reel. Two of the observers were shocked, one severely, but fortu-

nately no permanent injury resulted. For various reasons the use of ballon-sondes or sounding balloons is preferable in exploring the upper air and the kite method is being generally abandoned. Continuance of the kite work is problematical. Blue Hill Observatory¹ was one of the first—if not, indeed, the first—observatories, to fly kites for aerological research. It was also the first to use the sounding balloon, in the United States.

The observatory is now a part of the department of geology, but the close affiliation with the astronomical observatory which has existed for years will be continued and every effort made to utilize data for the benefit of the astronomer, particularly in connection with refraction.

In connection with the erection of a memorial fountain not far below the summit, water was piped from Canton. Through the generosity of Mrs. A. Lawrence Rotch and the cooperation of the Metropolitan Park Commission, an ample supply is available for observatory purposes.

The following changes in the observing force have occurred: Mr. C. F. Brooks resigned as research assistant; Mr. L. A. Wells continued as observer in chief, and Prof. R. De C. Ward had general supervision until the appointment of Mr. A. G. McAdie as professor of meteorology and director of the observatory. The last named assumed charge October 1, 1913.

WIND-ROSE PAPER.

An important conception in local climatology is conveniently expressed by the graphic expedient of the wind-rose. Thus, such indefinite statements as that (at any particular place) "an east wind brings rain," "the coldest wind comes from the northwest," etc., may be replaced advantageously by wind-roses, showing the degree of rainfall, temperature, etc., that is normally associated with each of the principal wind directions.

In the Meteorologische Zeitschrift for March, 1914, Prof. Carl Kassner, of the Royal Prussian Meteorological Institute, describes a device which, by facilitating the process of drawing wind-roses, should encourage the more extensive use of these valuable diagrams in climatology. Prof. Kassner has induced a German firm to prepare paper ruled with lines radiating from a center and with circles concentric around the same center. There are 16 radii; 8 of them heavy lines for the 8 principal wind directions, the others light lines for the intermediate directions. The circles are drawn at intervals of 2 millimeters, the total radius being 8 centimeters. Each of these diagrams is printed on a sheet of paper 22 by 28 centimeters. These sheets come in pads of 50 each. The lines are generally printed in brown ink. They are also, however, obtainable in pale blue; in which case, if, after the wind-rose is drawn, it is copied photographically, the lines of the original diagram will disappear.

RETIREMENT OF DR. ASSMANN.

On April 1, 1914, Geh. Reg.-Rat. Prof. Dr. Richard Assmann retired from the active duties in the execution of which he has been, for a number of years, perhaps the most conspicuous figure in German meteorology. An appreciative sketch of his career is published in the Deutsche Luftfahrer Zeitschrift by the editor, Herr Paul Béjeuhr.

Assmann was born in Magdeburg in 1845, and began his public career as a doctor of medicine. He soon, however, turned his attention to meteorology, and from 1881

¹ The history of the use of kites in aerological research was set forth in the REVIEW for January, 1914, p. 89.—EDITOR.